CATALOG DOCUMENTATION
REGIONAL ENVIRONMENTAL MONITORING AND ASSESSMENT PROGRAM - REGION 1
1993-1994 FISH TISSUE CONTAMINATION IN MAINE LAKES
FISH METRICS SUMMARY DATA

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1. DATA SET IDENTIFICATION

1.1 Title of Catalog document

Regional Environmental Monitoring and Assessment Program - Region 1
1993-94 Fish Tissue Contamination in Maine Lakes
Fish Metrics Summary Data Set

1.2 Author of the Catalog entry

Melissa Hughes, OAO Corporation

1.3 Catalog revision date

12 March 1998

1.4 Data set name

FISHSUM

1.5 Task Group

Region 1

1.6 Data set identification code

000010

1.7 Version

001

1.8 Requested Acknowledgment

If you plan to publish these data in any way, EPA requires a standard statement for work it has supported:

"Although the data described in this article have been funded wholly or in part by the U. S. Environmental Protection Agency through its Regional EMAP program, it has not been subjected to Agency review, and therefore does not necessarily reflect the views of the Agency and no official endorsement should be inferred."

2. INVESTIGATOR INFORMATION

2.1 Principal Investigators

Barry Mower
Jeanne DiFranco
Linda Bacon
David Courtemanch
State of Maine Department of Environmental Protection

2.2 Investigation Participant-Sample Collection

Not applicable

3. DATA SET ABSTRACT

3.1 Abstract of the Data Set

The R-EMAP Region 1 Fish Metrics Summary data set presents data summarized from field metric data. The minimum, maximum and mean were calculated for age, length and weight in order to characterize the fish comprising a composite contaminant sample.

3.2 Keywords for the Data Set

Lake, Maine, fish, fish length, fish weight, fish age

4. OBJECTIVES AND INTRODUCTION

4.1 Program and Project Objectives

4.1.1 Program Objective

Regional Environmental Assessment and Monitoring Program (R-EMAP) was initiated to test the applicability of the EMAP approach to answer questions about ecological conditions at regional and local scales. Using EMAP's statistical design and indicator concepts, R-EMAP conducts projects at smaller geographic scales and in shorter time frames.

4.1.2 Project Objective

The primary goal of this study was to estimate the levels of contamination in fish populations, and the risk these levels pose to human and wildlife consumers. The primary objective was to determine concentrations of cadmium, lead, mercury, PCBs and selected pesticides in fish collected from Maine lakes.

4.2 Data Set Objective

Present a summary of fish metrics to characterize the relationships among fish age, length, weight, trophic level and contaminant burden.

4.3 Data Set Background Discussion

Because high levels of contaminants have been found in Maine fish since the early 1970's, studies were begun to assess the relationship of these findings to low bald eagle reproduction rates. These studies revealed high mercury and polychlorinated biphenyls (PCBs) levels in nesting eaglets, while studies in other states began to report high levels of these and other contaminants in fish. These findings led the Maine DEP to initiate this study to measure levels of contamination in fish populations in the State's lakes and ponds, in order to determine the potential risks to both ecological and human health.

4.4 Summary of Data Set Parameters

Mean, minimum and maximum age, length and weight were calculated based on individual specimen data.

5. DATA ACQUISITION AND PROCESSING METHODS

5.1 Data Acquisition

5.1.1 Sampling Objective

Target fish specimen collection based on trophic level, distribution, size and desirability as game fish.

5.1.2 Sample Collection Methods Summary

Fish were collected by various methods to accumulate ten predators and five omnivores of the same species from each lake. Samples were extracted for age analysis.

5.1.3 Sampling Start Date

June 1993
September 1994

5.1.4 Sampling End Date

September 1993
September 1994

5.1.5 Platform

Not applicable.

5.1.6 Sampling Equipment

fishing rods, gill nets, trap nets, dip nets and beach seines

5.1.7 Manufacturer of Sampling Equipment

Not known

5.1.8 Key Variables

Data are derived from field data.

5.1.9 Sampling Method Calibration

Not applicable.

5.1.10 Sample Collection Quality Control

Not applicable.

5.1.11 Sample Collection Method Reference

Maine Department of Environmental Protection et. al., 1993. Project Work/Quality Assurance Plan, Fish Tissue Contamination in the State of Maine. December 20, 1993.

5.2 Data Preparation and Sample Processing

Age was determined using scales, pectoral fin rays, pectoral spines or opercula, depending on the species.

6. DATA MANIPULATIONS

6.1 Name of new or modified values

TOTAL, LENMIN, LENMEAN, LENMAX, AGEMIN, AGEMEAN, AGEMAX, SAGEMIN, SAGEMEAN, SAGEMAX, WTMIN, WTMEAN, WTMAX

6.2 Data Manipulation Description

Mean, minimum and maximum were calculated based on individual specimen data

6.3 Data Manipulation Examples

Not available

7. DATA DESCRIPTION

7.1 Description of Parameters

CONTENTS

Data Set Name: FISHSUM Observations: 354
Engine: V612 Variables: 19

#	Parameter SAS Name	Data Type	Len	Format	Parameter Label
1	LAKE	Char	8	$8.	Lake name.
2	MIDAS	Char	8	$8.	Lake identification number
3	SPEC	Char	9	$9.	Species of composite
4	STK	Char	7	$7.	Stocked; Y=yes
5	CODE	Char	7	$7.	PF=predator filet,PW=predator whole,OW=omnivore whole
6	TOTAL	Num	8	7.	Number of fish in composite
7	LENMIN	Num	8	7.	Minimum length (mm)
8	LENMEAN	Num	8	7.	Mean length (mm)
9	LENMAX	Num	8	7.	Maximum length (mm)
10	AGEMIN	Num	8	6.	Minimum age (years)
11	AGEMEAN	Num	8	8.1	Mean age (years)
12	AGEMAX	Num	8	7.	Maximum age (years)
13	SAGEMIN	Num	8	9.1	Minimum age (years) corrected for age when stocked
14	SAGEMEAN	Num	8	9.1	Mean age (years) corrected for age when stocked

7.1 Description of Parameters, continued

#	Parameter SAS Name	Data Type	Len	Format	Parameter Label
15	SAGEMAX	Num	8	8.1	Maximum age (years) corrected for age when stocked
16	WTMIN	Num	8	8.	Minimum weight (grams)
17	WTMEAN	Num	8	8.	Mean weight (grams)
18	WTMAX	Num	8	8.	Maximum weight (grams)
19	LAB	Char	8	$8.	Lab conducting analysis

7.1.6 Precision to which values are reported

Data were reported to the number of decimal places noted in 7.1.

7.1.7 Minimum values in data set

Variable	Minimum
TOTAL	1
LENMIN	154
LENMEAN	183
LENMAX	195
AGEMIN	1
AGEMEAN	1.0
AGEMAX	1
SAGEMIN	0.5
SAGEMEAN	0
SAGEMAX	1.0
WTMIN	30
WTMEAN	58
WTMAX	75

7.1.8 Maximum values in data set

Variable	Maximum
TOTAL	5
LENMIN	603
LENMEAN	615
LENMAX	630
AGEMIN	14
AGEMEAN	17.3
AGEMAX	22
SAGEMIN	14.0
SAGEMEAN	17.3
SAGEMAX	22.0
WTMIN	1730
WTMEAN	1730
WTMAX	2250

7.2 Data Record Example

7.2.1 Column Names for Example Records

```
LAKE;MIDAS;SPEC;STK;CODE;TOTAL;LENMIN;LENMEAN;LENMAX;AGEMIN;AGEMEAN;AGEMAX;SAGEMIN;
SAGEMEAN;SAGEMAX;WTMIN;WTMEAN;WTMAX;LAB;
```

7.2.2 Example Data Records

```
LAKE;MIDAS;SPEC;STK;CODE;TOTAL;LENMIN;LENMEAN;LENMAX;AGEMIN;AGEMEAN;AGEMAX;SAGEMIN;
SAGEMEAN;SAGEMAX;WTMIN;WTMEAN;WTMAX;LAB;
 ;41;WHS; ;OW;5;352;393;447;3;5.6;9;3.0;5.6;9.0;440;671;995;H;
 ;41;YLP; ;PW;5;218;236;290;4;6.4;11;4.0;6.4;11.0;120;153;250;H;
 ;41;YLP; ;PF;5;222;236;272;5;6.8;9;5.0;6.8;9.0;95;155;240;0;
 ;78;LKT; ;PW;3;447;507;543;6;6.7;8;6.0;6.7;8.0;750;1073;1250;H;
 ;78;LKT; ;PF;3;501;517;537;6;6.3;7;6.0;6.3;7.0;1035;1145;1290;0;
```

8. GEOGRAPHIC AND SPATIAL INFORMATION

8.1 Minimum Longitude

-71 Degrees 00 Minutes 47 Decimal Seconds

8.2 Maximum Longitude

-67 Degrees 10 Minutes 30 Decimal Seconds

8.3 Minimum Latitude

43 Degrees 15 Minutes 21 Decimal Seconds

8.4 Maximum Latitude

47 Degrees 07 Minutes 11 Decimal Seconds

8.5 Name of area or region

EPA Region 1

The sampling area included the entire state of Maine.

9. QUALITY CONTROL AND QUALITY ASSURANCE

9.1 Data Quality Objectives

Not applicable.

9.2 Data Quality Assurance Procedures

Not applicable.

10. DATA ACCESS

10.1 Data Access Procedures

Data can be downloaded from the WWW site or contact personnel listed in Section 10.3.

10.2 Data Access Restrictions

Not Applicable

10.3 Data Access Contact Persons

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10.4 Data Set Format

Data files are in ASCII semi-colon delimited format.

10.5 Information Concerning Anonymous FTP

Data cannot be accessed via ftp.

10.6 Information Concerning WWW

Data can be downloaded from the WWW site.

10.7 EMAP CD-ROM Containing the Data Set

Data are not available on CD-ROM

11. REFERENCES

DiFranco et. al., 1995. Fish Tissue Contamination in Maine Lakes. Data Report. State of Maine Department of Environmental Protection, Bureau of Land and Water Quality, Division of Environmental Assessment. September 1995.

Maine Department of Environmental Protection et. al., 1993. Project Work/Quality Assurance Plan, Fish Tissue Contamination in the State of Maine. Maine Department of Environmental Protection, Maine Department of Inland Fisheries and Wildlife and U.S. EPA Region 1 Environmental Services Division. December 20, 1993.

12. TABLE OF ACRONYMS

ACRONYM	DESCRIPTION
DEP	Maine Department of Environmental Protection
DIFW	Maine Department of Inland Fisheries and Wildlife
EMAP	Environmental Monitoring and Assessment Program
EPA	Environmental Protection Agency
HetL	Maine Department of Human Services Health and Environmental Testing Laboratory
MIDAS	Maine Information Display Analysis System - unique number assigned to each Maine lake
PCBs	polychlorinated biphenyls
QA	Quality Assurance
QA/QC	Quality Assurance/Quality Control
REMAP	Regional Environmental Monitoring and Assessment Program
UMO	National Biological Survey and Sawyer Environmental Chemistry Laboratories at the University of Maine at Orono

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